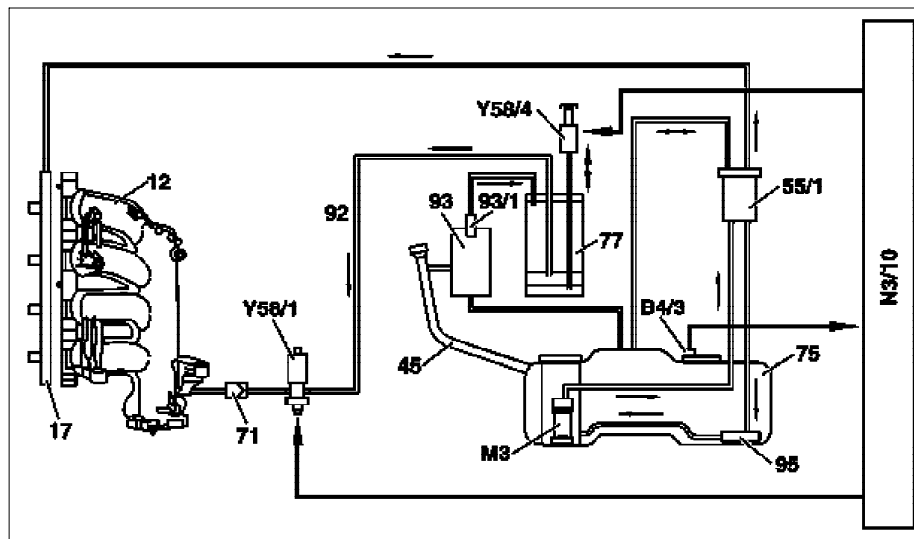


MODEL 203.040 /740 with ENGINE 271.948 with CODE (494) USA version

12	Intake manifold
17	Fuel rail
45	Fuel filler neck
55/1	Fuel filter with integrated fuel pressure regulator
71	Check valve
75	Fuel tank
77	Activated charcoal canister
92	Purge line (to engine)
93	Expansion reservoir
93/1	Safety valve (rollover valve)
95	Suction jet pump



P47.30-2076-05

B4/3	Fuel tank pressure sensor
M3	Fuel pump
N3/10	ME-SFI [ME] control unit
Y58/1	Purge control valve
Y58/4	Activated charcoal filter shutoff valve

The US legislature requires that the fuel vapors are not released into the atmosphere.

The leak test for the fuel evaporation control system must detect leaks with a diameter of over 0.5 mm and must take place in three stages (function chain):

- D Test for major leaks (equal to or greater than 3 mm)
- D Test for fine leaks (equal to or greater than 1 mm)
- D Test for micro-leaks (equal to or greater than 0.5 mm)

Test for major leaks

The activated charcoal canister shutoff valve is closed and the purge control valve opened. Intake manifold vacuum present in fuel tank . This vacuum is measured by the tank pressure sensor .

If there is no vacuum buildup in the fuel tank (approx. -6 mbar within approx. 12 seconds) there is a major leak (e.g. tank cap open, hose line loose)

The test will be interrupted and the error gross leak registered.

Check for micro leakage

If no minor leak has been detected, the purge system is briefly enabled and a vacuum of approx. -6 mbar is built up again. The vacuum must not drop any faster than 0.1 to 0.15 mbar per second for a closed system (depending on the level of fuel in the tank). If the vacuum drops more rapidly, the fault "micro leak" is registered.

The reduction in vacuum depends on the fuel level in the fuel tank and on degassing of the fuel. The degassing of the fuel is measured for a short time prior to the test by the fuel tank pressure sensor and is allowed for in the fault statement.

The activated charcoal canister shutoff valve is reopened after the tests.

If the ME control unit detects a system with a substantial major leak, the fuel reserve warning lamp (A1e4) in the instrument cluster (A1) blinks and the message "CHECK FILLER CAP" appears in the multifunction display (A1p13).

Test for a minor leak

The purge control valve is closed at a vacuum of around -6 mbar. The system is then closed airtight. The vacuum is then measured for approx. 30 seconds. The vacuum must not reduce more rapidly than 0.3 to 0.5 mbar per second (depends on fuel level). If the vacuum drops more rapidly, there is a minor leak.

The test will be interrupted and the error fine leak registered.

Test requirements

- D Engine at idle speed
- D Vehicle stationary
- D Drive position "D" or "R" engaged (for transmission 722)
- D Blocking time after engine start elapsed (approx. 16 minutes) or mixture adaptation occurring
- D Lambda control enabled
- D Intake air temperature < 45°C
- D Coolant temperature for engine start < 100°C
- D Air injection not active
- D Air pressure >780 hPa (which means that no test takes place above a height of about 2500 meters)
- D Low loading of activated charcoal canister
- D Fuel level in the fuel tank between approximately 1/4 and 3/4
- D No fault in the activated charcoal canister shutoff valve
- D No fault in the fuel tank pressure sensor
- D No fault in the purge control valve
- D Battery voltage >11 V

The test for minor and micro leaks is aborted if an excessive lean correction of the lambda control takes place during the buildup of the vacuum.

The function of the purge control valve is checked at the same time by the activation. If the closed switchover valve jams, the major leak fault is stored.



In case of an implausible fuel level resulting from a defective fuel level sensor, the tests are not stopped.



If no leak for the fault major leak is found (there is a clear hissing noise if there is a leak of more than 3 mm), replace fuel tank pressure sensor. The fuel tank pressure sensor may have a fault which results in a signal which is constant but still plausible (sensor sticking).

	Component description for the ME-SFI [ME] control unit	N3/10	GF07.61-P-6000KE
	Component description for the fuel tank	75	GF47.10-P-2000PE
	Component description for the activated charcoal canister	77	GF47.30-P-2010KE
	Component description for a purge control valve	Y58/1	GF47.30-P-2020KE
	Component description for a tank pressure sensor	B4/3	GF47.30-P-2100KE
	Component description for the activated charcoal canister shutoff valve	Y58/4	GF47.31-P-2100KE